

**ARIZONA GAME AND FISH DEPARTMENT  
HERITAGE DATA MANAGEMENT SYSTEM**

**Animal Abstract**

**Element Code:** AAABH01080

**Data Sensitivity:** No

**CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE**

**NAME:** *Rana chiricahuensis*  
**COMMON NAME:** Chiricahua Leopard Frog  
**SYNONYMS:** *Rana pipiens* complex "southern type"  
**FAMILY:** Anura: Ranidae

**AUTHOR, PLACE OF PUBLICATION:** Platz and Mecham. 1979. Copeia 1979:383-390.

**TYPE LOCALITY:** Herb Martyr Lake, 6 km west of Portal, Coronado National Forest, Cochise County, Arizona.

**TYPE SPECIMEN:** 100372 American Museum of Natural History. J.E. Platz, 10 September, 1971.

**TAXONOMIC UNIQUENESS:** *Rana* is a large genus, including Old and New World species (Stebbins 1985). Once thought to be a single species, the *Rana pipiens* complex contains nearly 30 species within North America and 7 species within Arizona (6 native and 1 introduced) (Hillis 1988). Genetic work may separate populations on the Mogollon Rim and populations in southeastern Arizona, southwestern New Mexico and Sonora, Mexico into 2 species (Platz and Mecham, 1979; J.E. Platz, unpublished data).

**DESCRIPTION:** Adults reach a snout-vent length of 5.0-13.5 cm (2.0-5.4 in.) (Stebbins 1985). Ground color on the dorsum is greenish or brown, the upper lip stripe diffuse or absent in front of eye, and the face is usually green. The skin is rougher with more tubercles, and dorsal spots are generally smaller and more numerous than in other leopard frogs. Dorsolateral folds are usually broken towards the rear, and these short segments angle inward. The rear of thigh speckled with "salt and pepper" markings, or small dots each with a tubercle scattered over a dark ground color. The venter is a dull whitish or yellowish, usually with gray mottling on throat and sometimes on the chest. The groin and lower abdomen are often yellow. Males have swollen and darkened thumb base (Stebbins 1985). Platz (1988) notes that the "posterior surfaces of thighs have numerous small papilla, each surrounded by cream colored skin...adults have mottled venter and males along southern Arizona border have vestigial oviducts".

**AIDS TO IDENTIFICATION:** *R. chiricahuensis* is similar to the northern leopard frog (*R. pipiens*), but stockier, with a more rounded head, shorter limbs, and slightly upturned eyes (Stebbins 1985). The call is a "snore" of unusually high pulse rate (about 34 pulse/sec at 22°C). The call is often a single note lasting 1-2 seconds (depending on temperature), which

is intermittently repeated and terminated by a "tail" produced by slight change in pitch (Frost and Platz 1983; Platz and Mecham 1984).

Other co-occurring leopard frogs include *R. pipiens*, which has a complete supralabial stripe and complete uninterrupted and undeflected dorsolateral folds. Adult *R. pipiens* have green pigment in the groin region, and males possess vestigial oviducts. *R. berlandieri* is native to New Mexico and has been unintentionally introduced in recent years to southwestern Arizona. Male *R. chiricahuensis*, unlike *R. yavapaiensis*, possess prominent vestigial oviducts (Platz 1988).

**ILLUSTRATIONS:** Color drawing (Stebbins 1985: plate 15)  
Color photo (Degenhardt et al. 1996: plate 24)

**TOTAL RANGE:** Mountain regions of central and southeastern Arizona; southwestern New Mexico, south in the Sierra Madre Occidental to Western Jalisco, Mexico 1066-2408 m (3500-7900 ft) (Platz and Mecham 1979; Sredl et al. 1997).

**RANGE WITHIN ARIZONA:** Arizona range is divided into two portions (Platz and Mecham 1979). The first portion extends from montane central Arizona east and south along Mogollon Rim to montane parts of west-southwestern New Mexico. The second portion extends through the southeastern montane sector of Arizona and adjacent Sonora.

## **SPECIES BIOLOGY AND POPULATION TRENDS**

**BIOLOGY:** *Rana chiricahuensis* are highly aquatic habitat generalists. Adults become active in February (Jennings 1988, 1990), and eggs are laid in spring and sporadically through the summer and fall. Eggs take approximately 14 days to hatch (Platz 1993), and larvae metamorphose in 3-9 months and can overwinter (Frost and Platz 1983; Jennings 1988, 1990). Life span and age at first reproduction are unknown.

**REPRODUCTION:** At high elevation, *R. chiricahuensis* breeds in late May through August (Zweifel 1968; Frost and Platz 1983). At lower, warmer localities, breeding occurs from mid-February through June and sporadically until September (Frost and Bagnara 1977; Frost and Platz 1983). Scott and Jennings (1985) did not note a difference in the time of breeding and different elevations, but did find a relationship between the time of breeding and water temperatures at sites in New Mexico (Jennings 1988, 1990). Male *R. chiricahuensis* call above and below the surface of the water (Degenhardt et al. 1996). Proximate cues that stimulate mating are not well studied, but oviposition has been correlated with rainstorms (Fernandez 1996) and changes in water temperature (Platz 1993). Females deposit 300-1485 eggs in spherical masses attached to submerged vegetation (Jennings and Scott 1991).

**FOOD HABITS:** Adults eat arthropods and other invertebrates (Stebbins 1985; Degenhardt et al. 1996). Larvae are herbivorous and likely eat available food items including algae, organic debris, plant tissue, and minute organisms in the water (Marti and Fisher 1998).

Stomach analyses of other members of the leopard frog complex from the western United States show a wide variety of prey items, including many types of aquatic and terrestrial invertebrates (e.g., snails, spiders, and insects) and vertebrates (e.g., fish, other anurans [including conspecifics], small birds; Stebbins 1951).

**HABITAT:** The primary habitat type of *R. chiricahuensis* is oak, mixed oak and pine woodlands. Other habitat types range into areas of chaparral, grassland, and even desert. *R. chiricahuensis* live and breed in lentic and lotic habitats in natural and man-made systems (Mecham 1968; Zweifel 1968; Frost and Bagnara 1977; Scott and Jennings 1985; Sredl and Saylor 1998). Natural aquatic systems include rocky streams with deep rock-bound pools, river overflow pools, oxbows, permanent springs, permanent pools in intermittent streams, and beaver ponds. Man-made aquatic systems include earthen stock tanks, livestock drinkers, irrigation sloughs, wells, mine adits, abandoned swimming pools, and ornamental backyard ponds.

**ELEVATION:** Central and eastern Arizona 1068 - 2452 m (3,500 - 8,040 ft); Arizona-Mexico border 372 - 1227 m (1,219 - 4,023 ft) (Platz and Mecham 1979; Sredl et al. 1997).

**PLANT COMMUNITY:** Primarily oak and mixed oak and pine woodlands, but also chaparral, grassland, and desert (Mecham 1968; Zweifel 1968; Frost and Bagnara 1977; Scott and Jennings 1985; Sredl and Saylor 1998).

**POPULATION TRENDS:** Statewide decline (Sredl et al. 1997).

## **SPECIES PROTECTION AND CONSERVATION**

**ENDANGERED SPECIES ACT STATUS:** LT (USDI, FWS 2002)  
[PT USDI, FWS 2000]  
[C USDI, FWS 1996]  
[C1 USDI, FWS 1994]  
[C2 USDI, FWS 1991]

**STATE STATUS:** WC (AGFD, WSCA in prep)  
[State Candidate AGFD, TNW 1988]

**OTHER STATUS:** Forest Service Sensitive (USDA FS Region 3 1999)  
[Forest Service Sensitive USDA, FS Region 3 1988]  
Determined Threatened (Secretaría de Medio Ambiente 2000)  
[Listed Threatened, Secretaría de Desarrollo Social 1994]

**MANAGEMENT FACTORS:** *R. chiricahuensis* is negatively impacted by introduced bullfrogs, crayfish, and predatory fish (Rosen et al. 1995; Fernandez and Rosen 1996). A chytrid fungus has infected populations of *R. chiricahuensis* as well as six other ranid frogs and two other amphibians, causing mass die-offs and local extirpations (Sredl et al. 2000). Other prominent threats are habitat fragmentation, major water manipulations, water pollution, and heavy grazing.

**PROTECTIVE MEASURES TAKEN:** *R. chiricahuensis* are a closed season species. Collection of leopard frogs requires a specific or similar permit (Arizona Game and Fish Department 2001). *R. chiricahuensis* has been petitioned to be listed as threatened under the Endangered Species Act of 1973 (USDI, FWS 2000).

**SUGGESTED PROJECTS:** Disease, distribution, habitat, population and life history studies are needed.

**LAND MANAGEMENT/OWNERSHIP:** Forest Service (Apache-Sitgreaves, Coconino, Coronado, and Tonto National Forests); Bureau of Indian Affairs (White Mountain Apache and San Carlos Apache Reservations); Bureau of Land Management; Private.

## **SOURCES OF FURTHER INFORMATION**

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**ADDITIONAL INFORMATION:**

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